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N° II.

PLANTING FOREST-TREES.



*The Thanks of the Society were voted this Session to
CAPTAIN HAWKINS, of Quay House, near
Kingsbridge, Devon, for the following Communi-
cation respecting a Plantation of FOREST-TREES,
made by him on $24\frac{1}{2}$ Acres of Land, incapable of
cultivation.*

SIR;

Quay House, near Kingsbridge, Devon,
October 1, 1822.

I BEG leave to detail some of the experiments made since my return from India, four years ago, in improving thirty acres of waste land on an estate of mine, called Flear, three miles from the town of Kingsbridge, in Devonshire, the greater part of the land not being worth half a crown an acre, and some of it not even sixpence an acre.

About two acres of this land, covered with immense heaps of rubble, thrown out from old slate quarries, being well situated for a cider orchard, and four acres and half of rocky ground lying favourable for irrigation, I converted the last-mentioned portion, at a considerable expense, into a watered meadow, and the other portion I prepared and planted with apple-trees.

But although the meadow promises to yield a fair crop of hay during the next season, and the orchard has this year produced some bushels of apples, yet, as all that I mean to do to

them will not be completed before the next Spring, I propose to defer the description of the method adopted in converting these two portions of useless ground to such valuable purposes; confining myself at present to the description of the remaining twenty-four acres and half, which were planted with forest-trees.

Of this quantity, seventeen acres and half was a brake of the common *dwarf* English furze, lying on the side of a steep rugged hill facing the West: being at first unwilling to plant the whole quantity, the furze was rooted out from six acres of the most even land, which was then ploughed, manured with lime, and sown to oats; but the crop failed, and I then determined to plant the whole, engaging Mr. John Pontey, nurseryman and planter, of Plymouth, for that purpose.

Mr. Pontey having viewed the land, advised me to proceed in rooting out the furze with mattocks, and to clear all the land previous to planting the young trees, similar to the six acres already cleared and sown to oats the season before, and accordingly four acres more were cleared of the furze roots. But finding the rooting up of the furze tedious and expensive, I determined to plant the young trees in the remaining seven acres and half, in pits dug among the furze roots, previously cutting off the growing furze close to the ground with a hook, and without any other preparation of the land whatever.

The land then was prepared for planting in three different ways, viz. one portion was cleared of the furze roots ploughed and sown to oats; a second portion was cleared by rooting out the furze with mattocks, without using the plough, which indeed could not have been worked; and the third portion underwent no other preparation but that of cutting off the growing furze with a hook.

Mr. Pontey undertook to plant fifteen acres and half by

contract, between the first day of October, 1818, and the first day of April, 1819, at the rate of 2,750 young forest-trees per acre, of from one to two feet and a half high, and to fill up all vacancies during the two following years, excepting such trees as might be destroyed by the depredations of cattle, for three pounds per thousand trees. The other two acres of furze brake being very rugged and rocky, were planted during the same season by Richard Penny and other labourers, by the day. The remaining six acres, situate on the slopes of old slate quarries, and on the sides of brooks and other places not fit for cultivation, were planted in a similar manner during the following season, by Richard Penny and others, by the day, without any further preparation to the land than cutting off the growing furze with a hook. The young trees were planted four feet asunder, amounting in the whole to 53,253 trees, averaging about twenty inches high.

In the Spring following the planting of the young trees, the furze roots sprouted, and I caused the furze shoots interfering with the young trees, together with the grass, brambles, and weeds contiguous to them, to be cut off with a hook, and placed around the roots of the young trees, leaving the furze shoots, grass, &c. standing in the intervening spaces between the trees to shelter them from the wind and storms. The same process was followed in the other portion of the plantations previously sown to oats, and likewise in that portion from which the furze roots had been dug up with mattocks; repeating the process three different times during the first season, twice the second, and once the third year.

The parings of the furze, grass, &c. placed around the young trees, protected their roots from the sun, retained the moisture in the land, and formed an excellent manure. The expense of the process was trifling, a man being able to ac-

comply about three parts of an acre in one day. The young trees have now completely overcome the furze and all other undergrowth, requiring no further care.

The result of the whole has been less failures among the young trees than Mr. Pontey, an old planter of upwards of thirty years experience, has ever known; and although the same process of cutting the undergrowth was practised on every part of the plantations, and all of the young trees are exceedingly vigorous and luxuriant, still, contrary to all expectation, the young trees planted among the furze roots have a decided superiority over the portion previously sown to oats, and to that cleared of the furze roots with mattocks, there being scarcely any perceptible difference between the two last-mentioned portions.

As the method above described of planting young forest trees in brakes of furze seems to be in every respect preferable to the common mode, and far less expensive and, as the method of cutting the undergrowth, and placing it around the roots of the young trees has produced uncommon vigour and luxuriance, and ensured less failures among the young trees, thereby securing the highly desired object of bringing up all the trees of young plantations of the same age and growth, not only among the furze, but likewise on the land prepared for planting in the usual way, I have been induced to lay the above account before the Society, accompanied, I trust, by satisfactory certificates.

I am, Sir,

&c. &c. &c.

A. Aikin, Esq.

Sec. &c. &c.

J. HAWKINS.

CERTIFICATES.

Plymouth, May 18, 1822.

I, JOHN PONTEY, of Plymouth, do hereby certify, that I, with my servants under my direction, have planted on captain John Hawkins's estate, called Flear, in the parish of East Allington, near Kingsbridge, in the county of Devon, between the 1st day of October, 1818, and the 1st day of April, 1819, 4,235 young oaks, 3,260 elms, 2,400 ash, 1,185 beech, 700 sycamore, 330 sweet chesnut, 12 horse-chesnut, 160 walnut, 50 poplars, 40 limes, 20 planes, 17 birch, 30 pincasters, 70 silver firs, 40 balm of Gilead firs, 130 spruce firs, 5 black spruce firs, 10 Norway firs, 40 black American firs, 5 Weymouth pine firs, 30 of sorts firs, 28 deciduous seedlings of sorts, 12,850 larch, and 12,560 Scotch firs; total, 38,207 trees, of from 1 to $2\frac{1}{2}$ feet high. The whole were planted to remain as a timber wood, but the Scotch firs were mostly planted so as to shelter the other trees exposed to the West and South West winds. The young trees were planted with the intention of averaging about 2,750 per acre, but the land in many places was so full of rocks, stones, and other impediments, that it was impossible so to plant them with accuracy. The land planted by me is fifteen acres and half; it had all been originally a brake of the common dwarf English furze, five acres and half of which had been thoroughly cleared and ploughed a few years ago, and sown with oats, after a lime manure, but the crop failed; four acres were cleared of the furze immediately previous to planting the young trees, by digging the furze up with mattocks, and thoroughly cleansing the land: and the remaining six acres were planted by digging holes for the young trees among the furze roots, the growing furze being previously cut off close to the ground with a hook, without any other preparation of the land whatever.

My agreement with captain Hawkins was, to fill up all failures among the young trees during the two succeeding years after they were planted. I viewed the whole plantation this present Spring, and I do further certify, that I never experienced fewer failures, nor ever saw a more thriving plantation of young forest trees, particularly in that part where the furze had been cut off with a hook, in the course of my life, although I have been a planter upwards of thirty years ; much of the success I attribute to captain Hawkins's care and management of the young trees after they had been planted by me.

Witness my hand this 18th day of May, 1822.

JOHN PONTEY.

Dodbrooke, May 20, 1822.

I, RICHARD PENNY, of Dodbrooke, near Kingsbridge, Devon, labourer in husbandry, do hereby certify, that I, with other labourers under me, did plant on captain John Hawkins's estate, called Flear, in the parish of East Allington, near Kingsbridge, between the 1st day of October, 1818, and the 1st day of April, 1819, 604 young oak trees, 525 young elms, 805 young ash, 75 young beech, 50 sycamores, 12 chesnuts, 5 walnuts, 20 poplars, 5 planes, 5 birches, 25 pinasters, 20 silver firs, 20 balm of Gilead firs, 25 spruce firs, 10 black spruce firs, 10 black American firs, 149 larches, and 387 Scotch firs, in all 2,752 trees.

The whole extent of land planted as above by me, is upwards of two acres ; all of the young trees were planted in similar soil, among rocks, and in hilly and broken ground, with mattocks and shovels, where it was impossible for a plough to be worked. The land had been originally a brake of the common dwarf English furze, which was rooted out with mattocks from one moiety of the land, and thoroughly cleared previous to planting the young trees : the other moiety of the

land was not cleared, the growing furze being merely cut off with a hook, and the young trees planted in holes dug among the furze roots.

I do likewise certify, that I did plant on the same estate, in the following season, 1819 and 1820, without any preparation to the land further than cutting the furze with a hook, 12,294 young trees of the above sorts, in about six acres and half of land, situate by the sides of brooks, on the slopes of old slate quarry rubbish, and among rocks and uneven ground not fit for cultivation.

I further certify, that I planted 12,000 white-thorn plants to fence the plantations made by me, and those made by Mr. John Pontey, nurseryman of Plymouth, in 1818 and 1819. And that in the following season I planted 5,000 young thorn plants to fence the plantations made by me during that season.

And I do hereby certify, that all the young trees are at this time healthy and vigorous, but those trees planted on the land from which the furze had been merely cut off with a hook, thrive better than those trees planted after the land had been cleared of the furze by rooting it out at a considerable expense, and I believe this portion of the plantations to be superior to any in this neighbourhood.

As witness my hand, made this tenth day of May, 1822.

The mark of RICHARD PENNY ✕.

Witness, A. RICHARDS.

WE, whose names are underwritten, do hereby certify, that we have viewed the new plantations on captain John Hawkins's farm, called Flear, situate within the parish of East Allington, in the county of Devon, and we have the satisfaction to say, that the sundry plantations on the farm are in the most thriving state (perhaps equal to any in the West

of England, of the same dimensions) containing about twenty-four acres, seventeen and a half of which have been certified (and we believe correctly) to have been planted between the first day of October, 1818, and the first day of April, 1819.

One remarkable fact which came within our observation, and which, we think, ought to be particularly noticed, is, that those trees that were planted in brakes of furze having holes simply dug up with a mattock, and the growing furze cut off with a hook, were in a more thriving state than those which had been planted at the same time in similar soil, after the whole of the furze had been rooted and cleared off the land, at a considerable expense.

The fences surrounding these plantations are remarkably well made and strong, and planted mostly with white-thorns.

Witness our hands, this 27th day of May, 1822.

THOMAS HARRIS, *Solicitor*.

ROBERT FOULE, *Yeoman*.

THOMAS SHEPHERD, *Do*.

NICHOLAS ELLIOT, *Do*.

JOSEPH HYETT, *Do*.

JOSEPH HYETT, Jun. *Do*.

EPHRAIM HYETT, *Do*.

RICHARD HYETT, *Do*.

JOHN EDDY, *Do*.

HENRY EDDY, *Do*.

GEORGE CRIMP, *Carpenter*.

THOMAS COOK, *Sawyer*.

THOMAS HUPELL, *Yeoman*.

THOMAS MARCH, *Carpenter*.

RICHARD BUNNER, *Yeoman*.

WILLIAM WILLING, *Do*.

MICHAEL OSBORNE, *Do*.

JOHN MURCH, *Do*.